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Is Contextualism Productive?

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Probably no behaviorist has seriously argued that human behavior closely resembles the behavior of a simple machine. Nevertheless, some misleading caricatures of behaviorism suggest that behaviorists do, in fact, regard the behavior of humans and nonhuman animals as analogous to the movement of a puppet or a jack-in-the-box. In these caricatures, pulling the proper string for the puppet or pressing the "open" button for the jack-in-the-box is treated as analogous to an eliciting stimulus for a response. The analogies suggest (a) that an organism does not behave except in reaction to an immediately antecedent stimulus and (b) that the relation between stimulus and response is fairly simple, direct, and largely independent of context. It is important to correct the false impressions about behavioral accounts that such caricatures and analogies create.

There are at least two ways to reduce the chances that the behavior-analytic conception will be confused with a simplistic mechanistic conception. One way is to describe behavior analysis in terms that cannot possibly be mistaken for a simplistic mechanistic description. Identifying behavior analysis as contextualistic appears to serve that purpose. Contextualism as a worldview is contrasted with a mechanistic worldview. The jack-in-the-box conception is a mechanistic conception (although a simplistic one). Thus, an approach that rejects the mechanistic view in general must certainly reject the jack-in-a-box view in particular. Those who favor contextualism as a framework for behavior analysis speak about the "act in context" as the unit of analysis, about controlling relations as "strong reciprocal interactions among stimuli and response functions *in context,*" and about "the meaning of behavior emerg[ing] from its context" (Morris, 1988, p. 309). Whatever other functions such phrases might serve, they surely make clear that the jack-in-the-box is not a proper model of behavior.

A second way to distance a behavior-analytic conception from the simplistic mechanistic one is to show that mechanistic accounts are not generally simplistic. This is what Marr (1993) attempted to do, and we think he succeeded. An implication of his analysis is that the jack-in-the-box is not merely a bad model of behavior. It is a bad model to illustrate the mechanistic approach. A sophisticated mechanistic approach recognizes the contextual dependence of phenomena including the "meaning" of behavior.

Each of these two ways of differentiating behavior analysis from simplistic mechanistic accounts has its own advantages and disadvantages. A disadvantage of Marr's (1993) way is that it demands a discrimination that might be tough to make. One must distinguish gradations (simplistic vs. sophisticated) of the same kind of account (mechanistic). Moreover, simplistic mechanistic accounts are not always as blatantly simplistic as the jack-in-the-box example. If the discrimination is not well taught, behavior analysis might be confused with a simplistic mechanistic account. With contextualism, in contrast, the discrimination is easy. No one is likely to mistake a contextualistic description for a simplistic mechanistic one.

The advantages of Marr's (1993) approach, however, far outweigh the disadvantages and more than compensate for the extra effort needed to teach the difficult discriminations. At least we think they do. The evidence is indisputable in many fields that the kind of approach Marr describes has generated laws and

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principles that improve our ability to predict and control natural phenomena.

Behavior analysis has developed within that same tradition. Behavioral phenomena are *analyzed* in terms of fundamental classes of functional relations between independent variables and dependent variables. The particular case is understood as an instance of *general* classes of functional relations. The very notion of a *functional* analysis implies a distinction between independent and dependent variables, with the latter standing on the left side of an equation sign and the former on the right.

In contrast, contextualism—at least as we understand it—seems inhospitable to analysis because analysis implies conceptually breaking apart the act in context. And it seems to us that a strong contextualistic view would not comfortably support the conceptual division of phenomena into parts that correspond to independent variables and dependent variables. Indeed, the very idea of a general law (or a general principle) seems like something a thorough contextualist would view with suspicion. Contextualism seems to us to lead to historical description of unique events rather than to the formulation of abstract generalizations. In short, when pushed to its extreme, contextualism does not appear to us to favor the development of the kind of science that enhances prediction and control. Marr (1993) says much the same thing.

We may be wrong, of course, in our assessment of contextualism's productivity. We are not aware, however, of any general principle within behavior analysis that has emerged from an explicitly contextualistic program, as distinct from the kind of sophisticated mechanistic program that Marr (1993) describes and that we think has generally characterized behavior-analytic research (including Skinner's).

Indeed, it might be instructive to consider briefly some of the recent work that has improved our principle-based understanding of contextual influences. Advocates of contextualism favor terms like *contextual determinants* and *setting variables*. But it is not always clear what such terms are intended to mean. Are these terms being used as technical terms to identify fundamental classes of variables? Or are they intended as catchall terms to indicate that there are multiple influences, many of which are likely to be overlooked in any particular behavioral analysis? Or, finally, are the terms intended to indicate that there are kinds of environmental influences that are not covered by the basic categories of stimulus functions recognized in traditional behavior-analytic theory? Bijou and Baer (1961), writing from a moderately contextualistic perspective, raise the latter possibility when they discuss the concept of "setting events."

> Setting events, like stimulus events, are environmental changes which affect behavior. But, in contrast to stimulus events, setting events are more complicated than the simple presence, absence, or change of a stimulus (such as turning on a light, a sudden drop in temperature, or a smile from mother). Instead, a setting event is a stimulus–response interaction, which, simply because it has occurred, will affect other stimulus–response relationships which follow it. (p. 21)

The possibility that stimuli can function not only to evoke behavior directly but also to alter the effect of other stimuli on behavior has a long history. During the past 15 years, however, the detailed empirical and theoretical analysis of such effects has been particularly intense (see, e.g., Balsam & Tomie, 1985). Although the matter is not fully settled, the evidence strongly suggests that stimuli in conditional discrimination arrangements (e.g., instructional stimuli in four-term operant contingencies and occasion setters in three-term Pavlovian contingencies) can function differently from discriminative stimuli and Pavlovian conditioned stimuli (Balsam & Tomie, 1985; Holland, 1983; Holland & Reeve, 1991; Rescorla, 1985; Sidman, 1986; Williams & Ploog, 1992). Furthermore, new techniques have revealed previously unsuspected effects of manipulating contextual stimuli, such as the normally stable features of the experimental test chamber, even in simple conditioning arrangements (Balsam, 1985). New general

principles are emerging that describe the various effects of contextual stimuli as a result of their participation in simple and higher order contingencies. In some cases, it is clear that the new principles can be integrated effectively and elegantly into the system of principles that comprise behavior-analytic theory (Sidman, 1986).

It strikes us as revealing—and more than a little ironic—that none of this empirical and theoretical work on contextual influences appears to have emerged from a distinctively contextualistic program. Instead, it appears to have been conducted entirely within the kind of sophisticated mechanistic tradition that Marr (1993) describes.

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